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| 09/280,601 | 03/29/99 | YANG | Z OPT-20500 |

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IM22/1005

EXAMINER

SERGEANT, R

ART UNIT

PAPER NUMBER

1711

DATE MAILED:

10/05/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/280,601

Applicant(s)

Yang et al.

Examiner

Sergent

Group Art Unit

1711

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-58 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-58 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4
- ☐ Notice of References Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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1. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There appears to be a word omission between "made" and "polymerizing". Correction is required.

2. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Since claim 21 is directed to a monomer composition, the terminology within claim 22 stating that a polymer is made according to claim 21 is ambiguous.

3. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The significance of the terminology, "two 2", is unclear.

4. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The compound within the Markush group for the polythiol is incorrect. It is noted that the language, in question, does not correspond to the language within lines 17-19 of page 5 of the specification.

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5. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The triallyl-triazine-trione compound is incorrect, because the first set of positions should be 1,3,5; rather than 1,2, 5.

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The examiner has not found support within the specification for the specific reaction catalysts.

7. Claims 3 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have specified that R_2 and R_3 are groups consisting of polyvalent aliphatic or alicyclic and aromatic hydrocarbon; however, the means used to define the group is ambiguous, because, due to the respective uses of "or" and "and", it is not clear when the hydrocarbon is aliphatic, alicyclic or aromatic. For example, is the hydrocarbon either aliphatic or both alicyclic and aromatic?

8. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Applicants have stated that R and R₄ may be substituted; however, the terminology renders the claims indefinite, because applicants have not specified what the substituents are.

9. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite, because applicants have not specified chain lengths for the definitions of R₁, R₂, R₃, or R₄.

10. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The definition for "z" has been incorrectly specified as 1 to 30; however, line 7 of page 9 of the specification indicates that the definition should be 1 to 3.

11. Claims 23-58 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The examiner has not found support for the range of polythiol compounds represented by formula (1) within claims 23, 27, and 55. Also, clear support has not been found for the terminology, "neither a hydroxyl group nor a mercapto group", within claims 23, 27, and 55. Lastly, support has not been found for the subject matter of claims 25, 26, 29, and 30.

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12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-3, 11-14, 19, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Skinner et al. ('600).

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Patentees disclose curable resin compositions comprising polyisocyanates, polyols, and reactive diluents, wherein the preferred reactive diluents are polyacrylate compounds, such as trimethylolpropane triacrylate and pentaerythritol tetraacrylate. Patentees' polyacrylate compounds are considered to read on applicants' claimed polyene component. Patentees further disclose that the composition can be cured in the presence of catalysts and a free radical initiator. See abstract and columns 4-10.

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skinner et al. ('600).

As aforementioned within paragraph 13, patentees disclose compositions comprising polyisocyanates, polyols, and polyacrylates, wherein the composition may be cured in the presence of free radical initiators, such as azo compounds, and catalysts, such as dibutyl tin dilaurate and tertiary amines. See column 10, lines 2-49. Patentees are silent regarding the specific use of tributylamine and azobis (cyclohexanecarbonitrile); however, the position is taken that the aforementioned compounds are known within the art, and in view of the teaching within Skinner et al. that azo compounds and tertiary amines, such as triethylamine, are known additives, the position is further taken that it would have been obvious to utilize the claimed compounds within the teachings of Skinner et al., so as to obtain the instant invention.

15. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Within claim 8, applicants have specified a Markush group to further define the polythiol monomer; however the first structure of the Markush group is defined as containing thiol groups, hydroxyl groups, or amine groups. Therefore, the Markush group is not consistent with the polythiol monomer.

16. Claims 1-8, 11-13, 19, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Goyert et al ('884).

Patentees disclose reactive compositions comprising polyisocyanates; active hydrogen compounds, such as polythiols, polyols, polyamines, etc.; and crosslinking agents, wherein the preferred crosslinking agents are triacrylates and tetraacrylates. See abstract and columns 4-8.

17. Claims 1-9 and 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa et al ('967) in view of Kajimoto et al. ('387) or Kanemura et al. ('733) or Nagata et al. ('545).

Ohkawa et al. disclose optical molding compositions comprising a polythiol component and a polyene component, wherein the polyene component may be produced by reacting a polyisocyanate with an active hydrogen containing compound containing unsaturation. See abstract; column 5, line 50; column 7, lines 42+; and column 8.

Ohkawa et al. are silent regarding the specific reaction of isocyanate groups with the thiol groups of the polythiol component; however, the position is taken that the reference serves to teach that optical quality polymers may be produced from reaction constituents comprising polyenes, polythiols, and isocyanate components. Furthermore, the reference demonstrates that

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isocyanate-based reaction products are optically compatible with polyene-polythiol reaction products.

18. Kajimoto et al., Kanemura et al., and Nagata et al. all disclose the production of optical quality lens articles by reacting polyisocyanates with thiol containing reactants. See abstracts. Therefore, the position is taken that since Ohkawa et al. disclose the reaction of polyenes and polythiols in the presence of isocyanate reaction products to yield optical quality compositions and since the reaction of polyisocyanates and polythiols was known at the time of invention to have been beneficial in the production optical quality compositions, one of ordinary skill in the art would have been motivated to combine the teachings of the primary and secondary references so as to yield a polymer having a blend of thiourethane and thioether linkages, because one would have expected high optical quality with the attendant advantages of both the prior urethane and polyene/polythiol reaction systems. Furthermore, it has been held that it is prima facie obvious to combine two compositions, each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. In re Kerkhoven, 205 USPQ 1069.

19. Claims 1-6, 8, 11-13, 19, 21, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Sasagawa et al. ('658).

Patentees disclose monomer compositions and processes of reacting the compositions, so as to obtain polymeric lens formulations. The monomers comprise aromatic polyisocyanates,

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polyene compounds, such as 1, 3-bis(acryloyl) glycerin, and polythiols. See abstract and columns 2 and 3.

20. Claims 7, 9, 10, 14-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasagawa et al. ('658).

As aforementioned within paragraph 19, patentees disclose lens forming compositions comprising a polyisocyanate, a polyene, and a polythiol; however, patentees are silent regarding such characteristics as applicants' claimed initiator compound and applicants' claimed tinting agents and applicants' claimed time and temperature profile for the curing operation. Official notice is taken under the provisions of MPEP 2144.03 that the claimed initiators, additives, and curing profile was known at the time of invention. Therefore, one of ordinary skill in the art would have been motivated to utilize the known initiators and tinting agents in the production of lenses based on the reaction of unsaturated monomers, because the use of the aforementioned components was conventional within the art. Lastly, the position is taken that it would have been obvious to modify curing profiles, so as to obtain polymers having optimal properties.

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

22. Claims 1-22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 82-105 of copending Application No. 08/425,958. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to a composition comprising equivalent reactants.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (703) 308-2982.

R. Sergent/vr

09-20-99


RABON SERGENT
PRIMARY EXAMINER